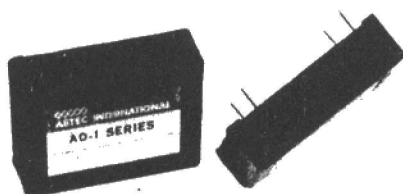


DATA SHEET

Greenbank Electronics
92 New Chester Road
New Ferry, Wirral
Merseyside L62 5AG
Tel: 051-645 3391

AD-1 SERIES

DC-DC CONVERTOR MODULES



A WIDE RANGE OF DC-DC CONVERTORS WITH OUTPUTS UP TO 1000MW IS AVAILABLE FOR DIFFERENT APPLICATIONS. THESE CONVERTORS PROVIDE HIGH RELIABILITY OPERATION AND SINGLE POSITIVE, NEGATIVE OR DUAL OUTPUTS AVAILABLE.

FEATURES

- * LOW COST
- * HIGH EFFICIENCY
- * EXCELLENT REGULATION WITH REGARD TO INPUT AND LOAD VARIATION
- * INTERNAL FILTER CAPACITOR
- * SMALL SIZE AND EPOXY ENCAPSULATED IN POLYCARBONATE BOX.

STANDARD TYPES

TYPE	PACKAGE	OUTPUT VOLTAGE VOUT		OUTPUT CURRENT IO(MA)		POWER OUTPUT PO (MW)	CONV. EFFI. η (%)	TEMP. COEF. TC (%/°C)	REGULATION (%)		OUTPUT RIPPLE VRIP (MVP-P)
		(V)	(%)	MIN.	MAX.				LINE	LOAD	

SINGLE POSITIVE OUTPUT :

INPUT VOLTAGE VIN = +5V±20%

AD1P09A05	A1	+9	+3	16	56	500	75	0.05	0.8	1.0	300
AD1P09A10				33	112	1000	75	0.05	0.8	1.1	500
AD1P12A05		+12		12	42	500	80	0.05	0.8	0.9	300
AD1P12A10				25	84	1000	75	0.05	0.8	1.0	500
AD1P15A05		+15		10	34	500	80	0.05	0.8	0.9	300
AD1P15A10				20	68	1000	75	0.05	0.8	1.0	500
AD1P20A05		+20		7	25	500	80	0.05	0.8	0.9	400
AD1P20A10				15	50	1000	75	0.05	0.8	1.0	600

SINGLE NEGATIVE OUTPUT :

INPUT VOLTAGE VIN = +5V±20%

SINGLE NEGATIVE CORRELATION				IN CORRELATION WITH POSITIVE									
ADIN05A05	A2	-5	+3	30	100	500	70	0.08	0.8	0.9	300		
ADIN05A10				60	200	1000	65	0.08	0.8	1.0	500		
ADIN09A05		-9		16	56	500	75	0.08	0.8	0.9	300		
ADIN09A10				33	112	1000	70	0.08	0.8	1.0	500		
ADIN12A05		-12		12	42	500	75	0.08	0.8	0.9	300		
ADIN12A10				25	84	1000	75	0.08	0.8	1.0	500		
ADIN15A05		-15		10	34	500	75	0.08	0.8	0.9	300		
ADIN15A10				20	68	1000	75	0.08	0.8	1.0	500		
ADIN20A05				-20		7	25	500	75	0.08	0.8	0.9	400
ADIN20A10						15	50	1000	75	0.08	0.8	1.0	600

DUAL OUTPUT :

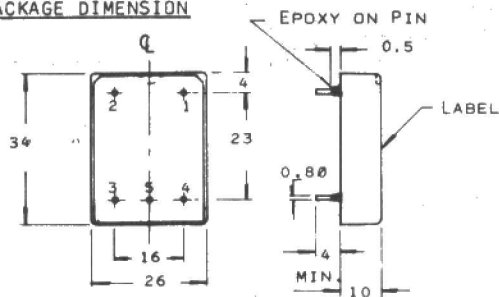
INPUT VOLTAGE VIN = +5V±20%

AD1D09A05	A3	+9	+4	+8	+28	500	70	0.08	1.0	1.2	300	
AD1D09A10				+16	+56	1000	70	0.08	1.0	1.5	500	
AD1D12A05		+12		+6	+21	500	75	0.08	1.0	1.2	300	
AD1D12A10				+12	+42	1000	75	0.08	1.0	1.5	500	
AD1D15A05		+15		+5	+17	500	75	0.08	1.0	1.2	300	
AD1D15A10				+10	+34	1000	75	0.08	1.0	1.5	500	
AD1D20A05		+20		+4	+13	500	75	0.08	1.0	1.2	400	
AD1D20A10				+7	+25	1000	70	0.08	1.0	1.5	600	

NOTES :

1. ALL OUTPUT VOLTAGE ARE MEASURED WITH RESPECT TO -VIN (COMMON).
2. REGULATION : LINE (VIN MIN. TO MAX.); LOAD (IO MIN. TO MAX.)
3. CONVERSION EFFICIENCY IS DETERMINED AT MAXIMUM IO WITH +5V INPUT.
4. OPERATING TEMPERATURE : 0°C TO +50°C
5. ADDITIONAL EXTERNAL FILTER CHOKES AND CAPACITORS WILL SIGNIFICANTLY IMPROVE RIPPLE AND NOISE SPIKES.

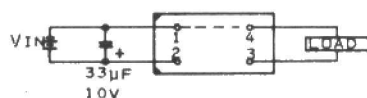
PACKAGE DIMENSION



TOLERANCE (NOMINAL) : ± 0.3

STANDARD CONNECTION

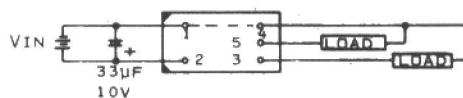
A1/A2 PACKAGE



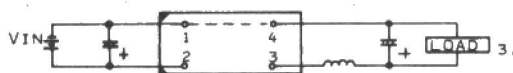
PIN ASSIGNMENTS

A1 PACKAGE :	1	-VIN (COMMON)
	2	+VIN
	3	+VO
	4	-VO (COMMON)
A2 PACKAGE :	1	-VIN (COMMON)
	2	+VIN
	3	-VO
	4	+VO (COMMON)
A3 PACKAGE :	1	-VIN (COMMON)
	2	+VIN
	3	-VO
	4	OV (COMMON)
	5	+VO

A3 PACKAGE



CONNECTION WITH CHOKE COIL



- NOTES :
1. CAPACITOR VOLTAGE RATING AND POLARITY TO MATCH CONVERTOR OUTPUT.
 2. SCHEMATIC SHOWN FOR SINGLE OUTPUT, FOR DUAL OUTPUT, SAME CONNECTION CONNECT TO EACH OUTPUT.
 3. WITH A 33µF OR 47µF FILTER CAPACITOR A GUIDE TO THE CHOKE INDUCTANCE MAY BE FOUND FROM THE EMPIRICAL FORMULA $L = \frac{V_D}{2I}$ µH WITH V_D VOLTS AND I_D AMP. DC RESISTANCE SHOULD BE COMPATIBLE WITH LOAD.

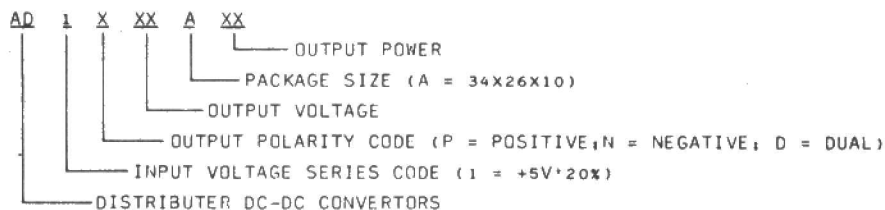
TECHNICAL INFORMATION

1. CONVERSION EFFICIENCY IS DEFINED BY THE FOLLOWING FORMULA:

$$\eta = \frac{\text{TOTAL POWER OUTPUT}}{\text{TOTAL POWER INPUT}} \times 100\%$$
2. TEMPERATURE COEFFICIENT IS DEFINED BY THE FOLLOWING FORMULA:

$$TC = \frac{V_D(50^\circ\text{C}) - V_D(0^\circ\text{C})}{V_D(25^\circ\text{C}) \times 50} \times 100\% / ^\circ\text{C}$$
3. LINE REGULATION IS THE DC OUTPUT VOLTAGE CHANGE AS THE INPUT VOLTAGE IS CHANGED FROM MINIMUM INPUT TO MAXIMUM INPUT.
4. LOAD REGULATION IS THE DC OUTPUT VOLTAGE CHANGE AS THE LOAD CURRENT IS CHANGED FROM MINIMUM LOAD TO MAXIMUM LOAD.

TYPE NUMBER SYSTEM



NOTE: This leaflet shows the full range of AD-1 series converters at present. As not all are available from stock, please see our advertisements or price lists for stock range carried.